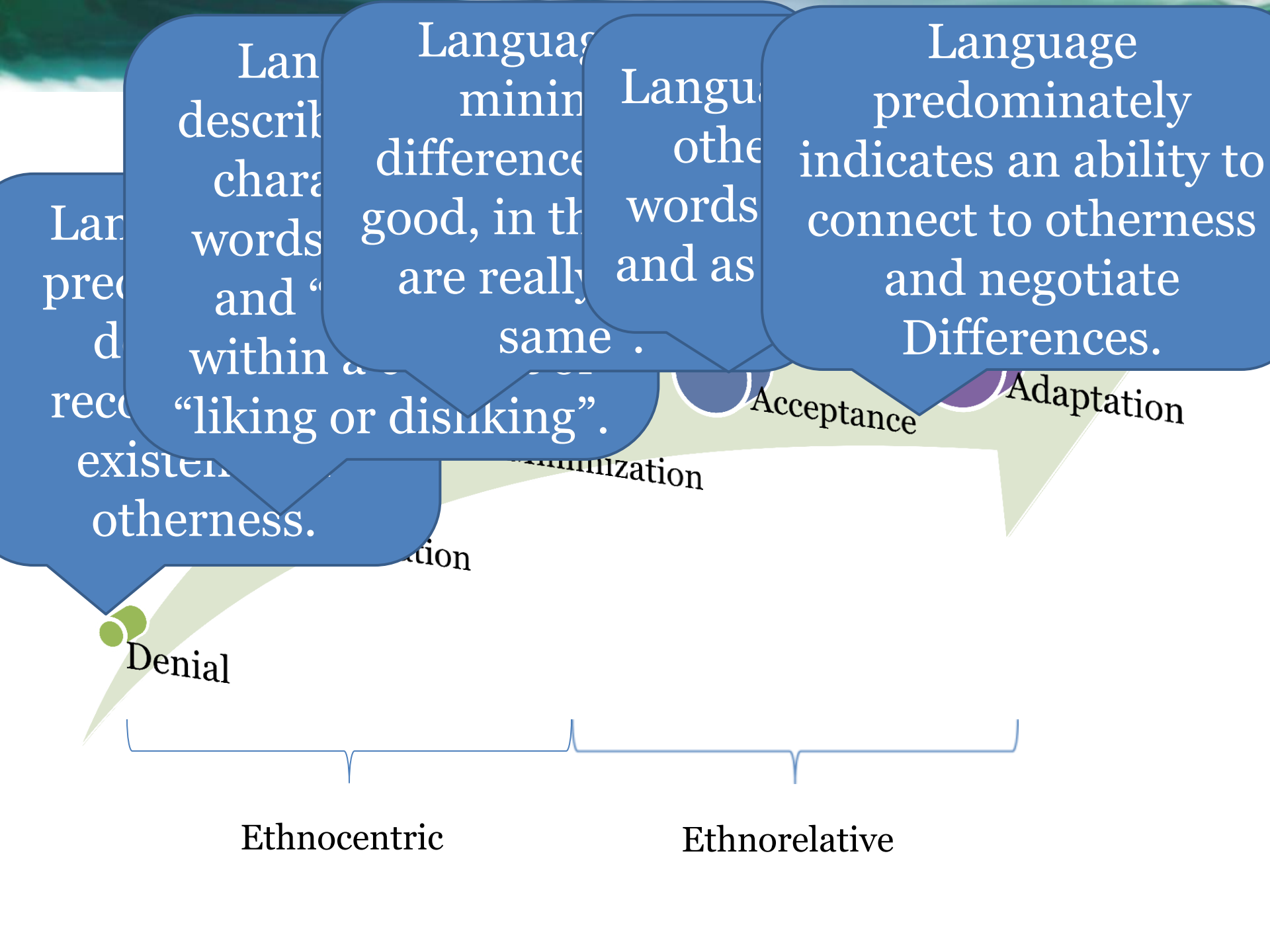
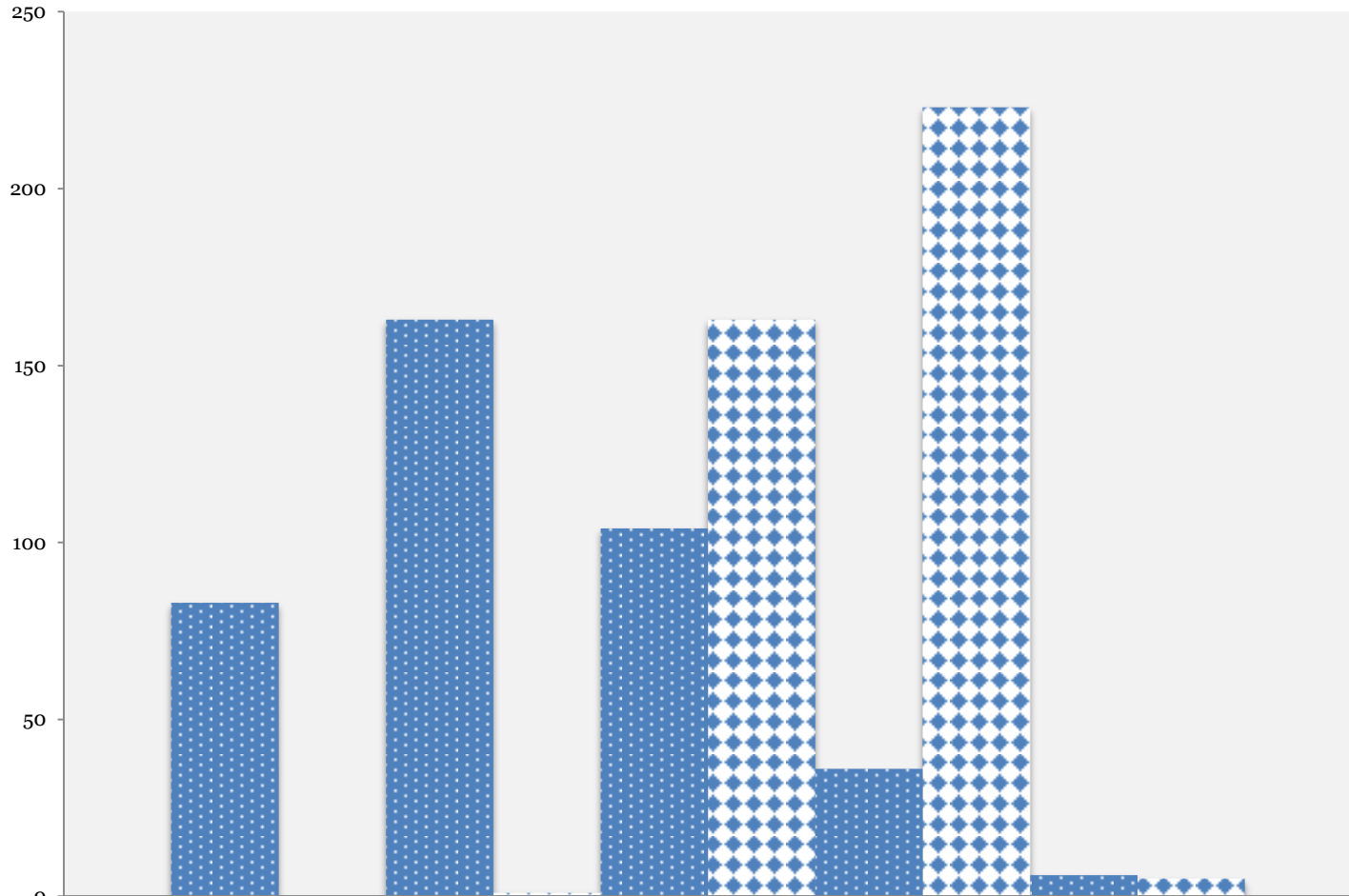





What do we know?
What can we do?



First-year Students Developmental Orientation and Perceived Orientation (Groll, 2013)



Perceived Orientation	0	0	1	163	223	5
Developmental Orientation	83	163	104	36	6	0



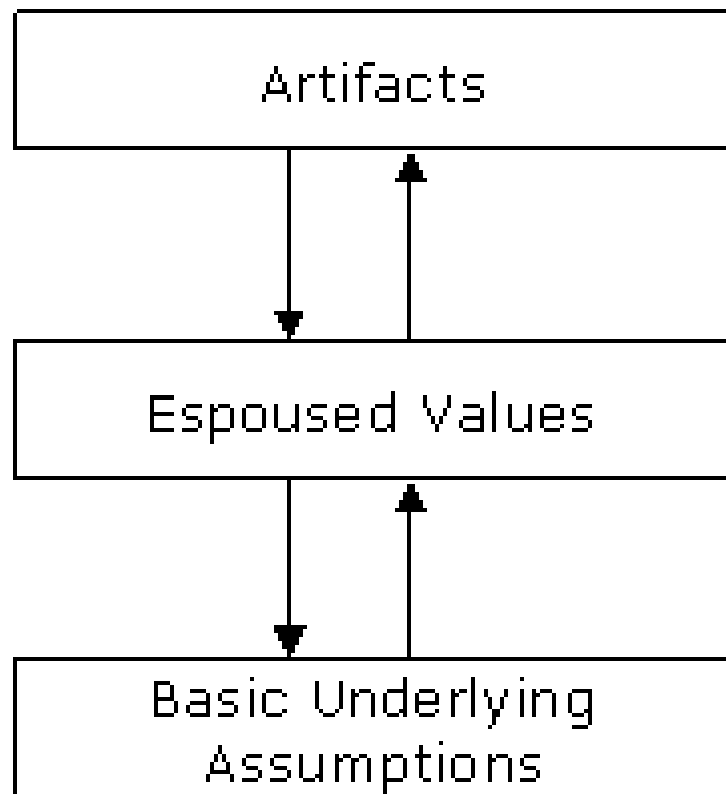
Yes, we are learning about students, but we do not know where faculty and staff will land with this measurement.

How will they teach a topic if they are ethnocentric versus if they are ethnorelative?



What is Culture?

Three Levels of Culture (Schein, 2010)

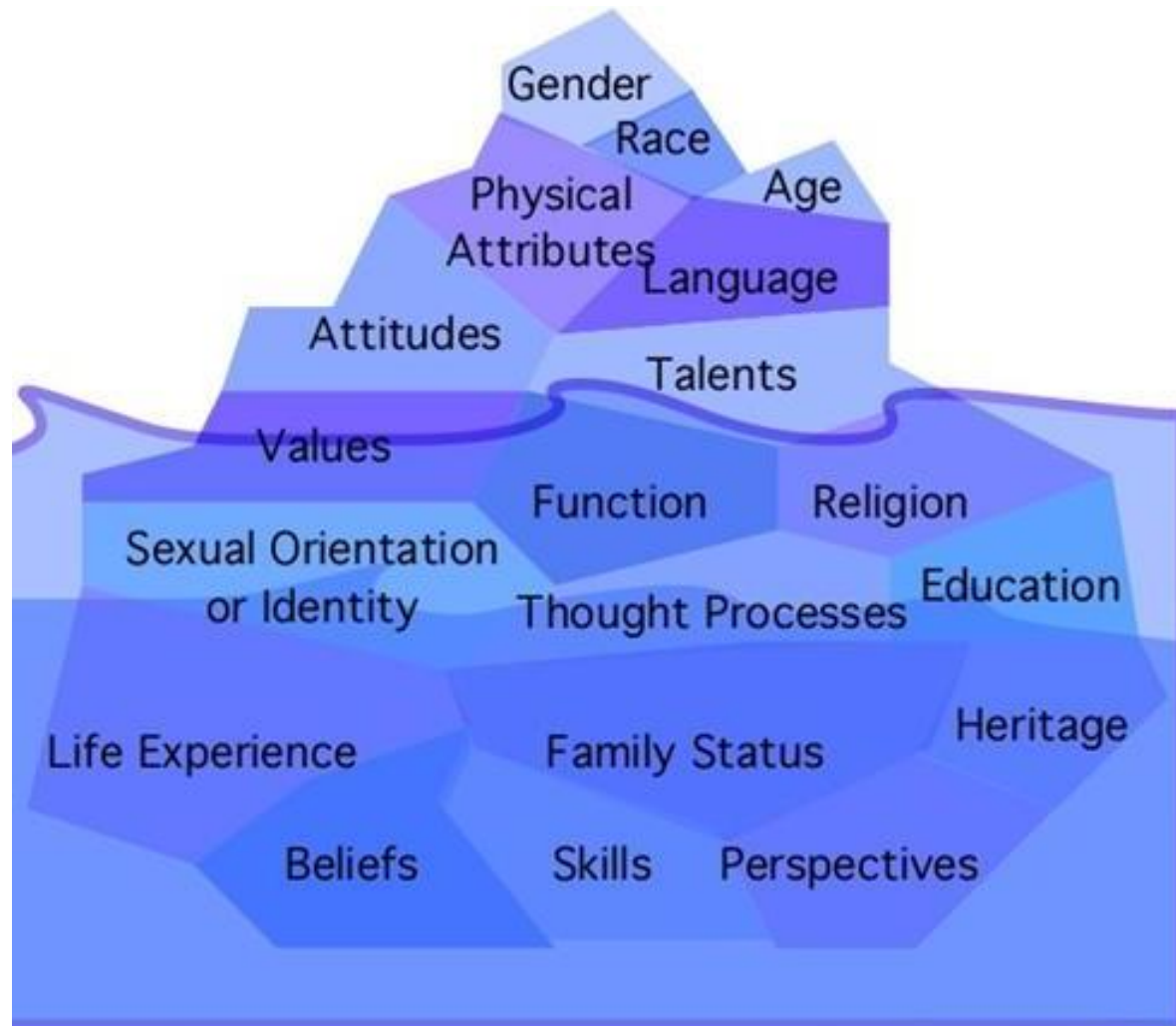


Visual organizational structures and processes
(hard to decipher)

Strategies, goals, philosophies
(espoused justifications)

Unconscious, taken for granted beliefs, perceptions, thoughts and feelings
(ultimate source of values and action)

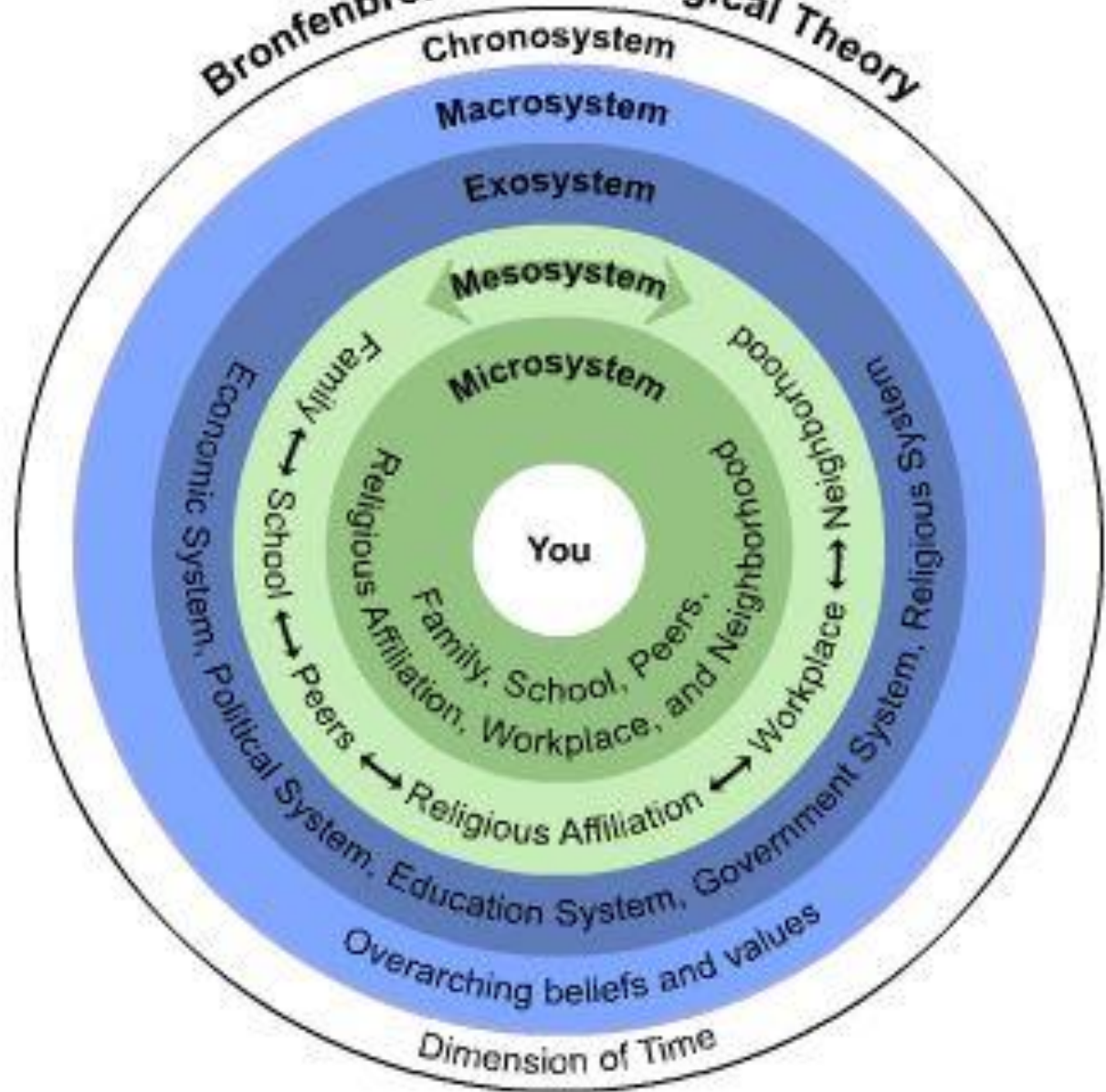
Iceberg Model (Hall & Hall's, 1990)






Where Culture Happens

Bronfenbrenner's Ecological Theory





Dimensions of Culture








Hofstede's Theory of Cultural Dimensions (Hofstede & McCrae, 2004)

- **Power Distance (PDI)**
- **Individualism versus Collectivism (IDV)**
- **Masculinity versus Femininity (MAS)**
- **Uncertainty Avoidance (UAI)**
- **Long-Term Orientation (LTO)**

Also a 6th dimension but less research done on this dimension

- **Indulgence versus Restraint**

Top 5 Nationalities Represented at Purdue (2011-2012)

	Country	Total at Purdue	Total in FYE
	China	3272	161
	India	1305	78
	South Korea	882	20
	Malaysia	268	11
	UAE	264	19



Hofstede's Theory of Cultural Dimensions

- **Power Distance (PDI)**

- People in societies exhibiting a large degree of power distance accept a hierarchical order in which everybody has a place and which needs no further justification

- Individualism versus Collectivism (IDV)

- Masculinity versus Femininity (MAS)

- Uncertainty Avoidance (UAI)

- Long-Term Orientation (LTO)

Top 5 Nationalities Represented in the COE

Power Distance Index

HIGH



LOW

USA Power Distance Index = 40



Hofstede's Theory of Cultural Dimensions

- **Power Distance (PDI)**
- **Individualism versus Collectivism (IDV)**
 - A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we."
- **Masculinity versus Femininity (MAS)**
- **Uncertainty Avoidance (UAI)**
- **Long-Term Orientation (LTO)**

Top 5 Nationalities Represented at the COE

Individualism vs. Collectivism

IND



COL

USA Individualism vs. Collectivism = 91



Hofstede's Theory of Cultural Dimensions

- Power Distance (PDI)
- Individualism versus Collectivism (IDV)
- **Masculinity versus Femininity (MAS)**
 - Masculine societies at large are more competitive
 - Feminine societies at large are more consensus-oriented.
- Uncertainty Avoidance (UAI)
- Long-Term Orientation (LTO)

Top 5 Nationalities Represented at the COE

Masculinity vs. Femininity

MAS



FEM

USA Masculinity vs. Femininity = 62



Hofstede's Theory of Cultural Dimensions

- Power Distance (PDI)
- Individualism versus Collectivism (IDV)
- Masculinity versus Femininity (MAS)
- **Uncertainty Avoidance (UAI)**
 - how a society deals with the fact that the future can never be known
- Long-Term Orientation (LTO)

Top 5 Nationalities Represented at the COE

Uncertainty Avoidance Index

HIGH



LOW

USA Uncertainty Avoidance Index = 46



Hofstede's Theory of Cultural Dimensions

- Power Distance (PDI)
- Individualism versus Collectivism (IDV)
- Masculinity versus Femininity (MAS)
- Uncertainty Avoidance (UAI)
- **Long-Term Orientation (LTO)**
 - can be interpreted as dealing with society's search for virtue

Top 5 Nationalities Represented at the COE

Short-term vs. Long-term Orientation



USA Long-term Orientation = 29

Top 5 Overview

Power Distance Index



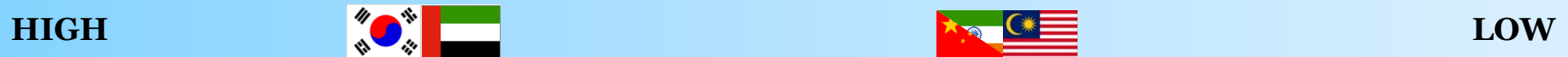
Individualism vs. Collectivism



Masculinity vs. Femininity



Uncertainty Avoidance Index



Short-term vs. Long-term Orientation



How do we compare?

- U.S.A.
- Engineers
- You as an Individual

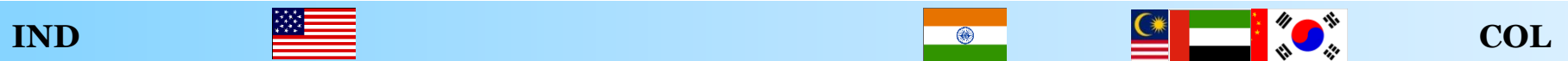


Hofstede's National Cultural Dimensions

Power Distance Index



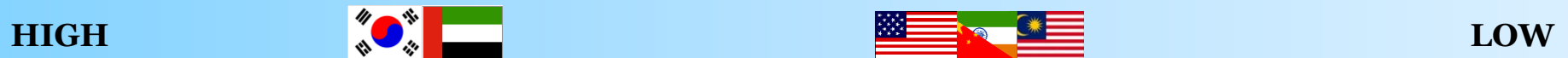
Individualism vs. Collectivism



Masculinity vs. Femininity



Uncertainty Avoidance Index



Short-term vs. Long-term Orientation





What are the implications for our engineering students, faculty, and staff?



ENGR Courses Design & Teaming for a start

Design

- Open-ended questions and expectations
- Not fully-defined criteria
- Iterative nature of engineering problem solving
- When is enough good enough?

Teaming (Wang & Imbrie, 2009)

- Under-representation
- Trust
- Interdependency
- Goal Setting
- Potency

Credits

Most examples are from
E. Dan Hirleman, Dean of
Engineering, UC-Merced

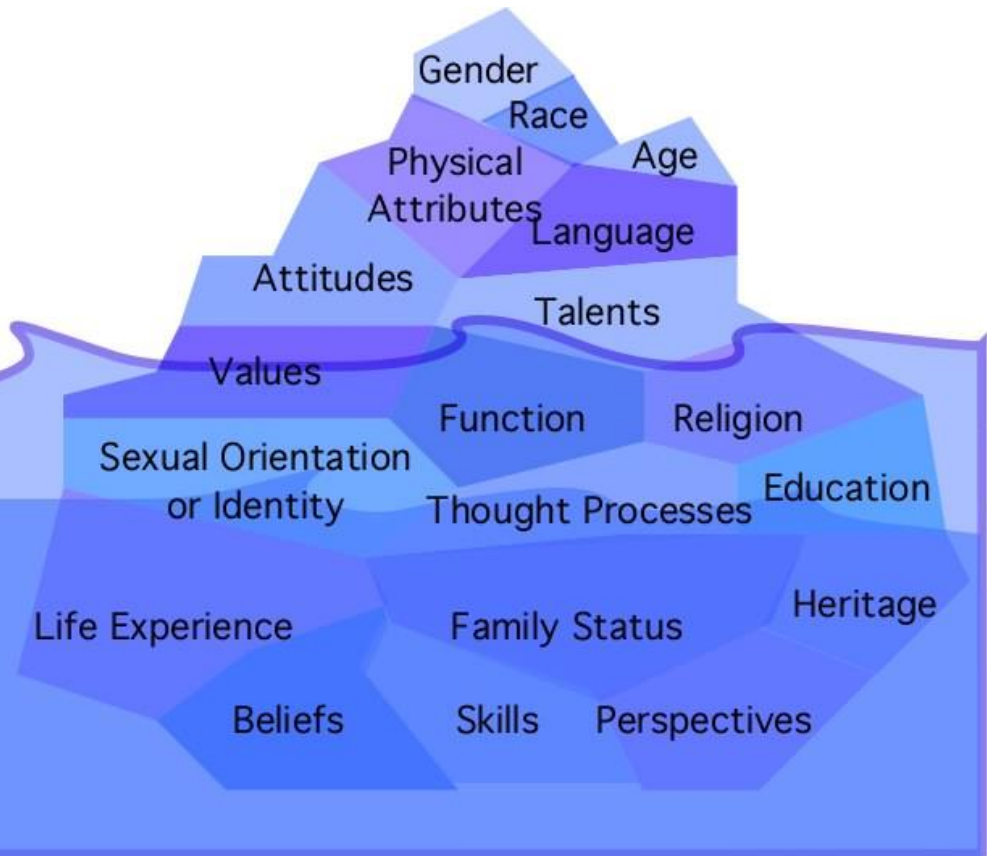
And

Keith J. Bowman, Head of
Mechanical and Materials
Engineering, U of Illinois-
Chicago

Also, input from several
members of the Dean's
Diversity Advisory
Council which has been in
existence over 10 years
and these presentations
have been done for over 9
years.

Diversity

Diversity means all the ways we differ. It includes the readily visible differences and the underlying differences that may be below the surface.





Objectives

- Define diversity
- The case for diversity
- Nurturing diversity – inclusiveness



Diversity

Purdue Definition:

A situation that includes representation of multiple (ideally all) groups within a prescribed environment, ... An emphasis on accepting and respecting differences.

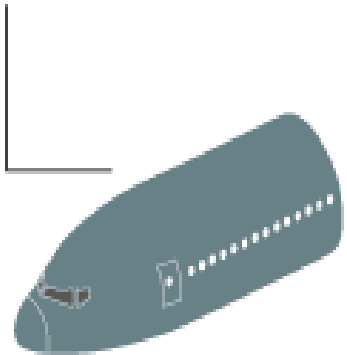
Takes us beyond Equal Employment Opportunity
and Affirmative Action

Boeing 787 Dreamliner

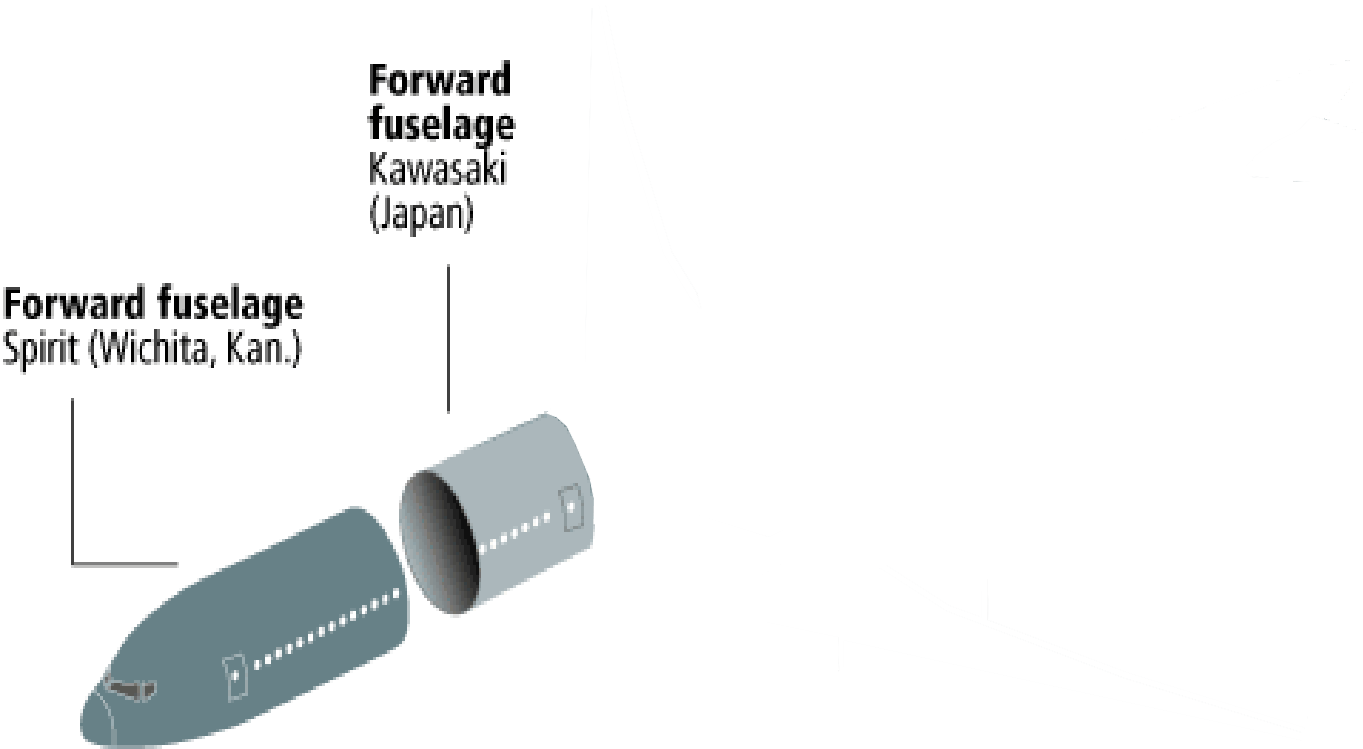


Boeing 787 Dreamliner

Forward fuselage
Spirit (Wichita, Kan.)

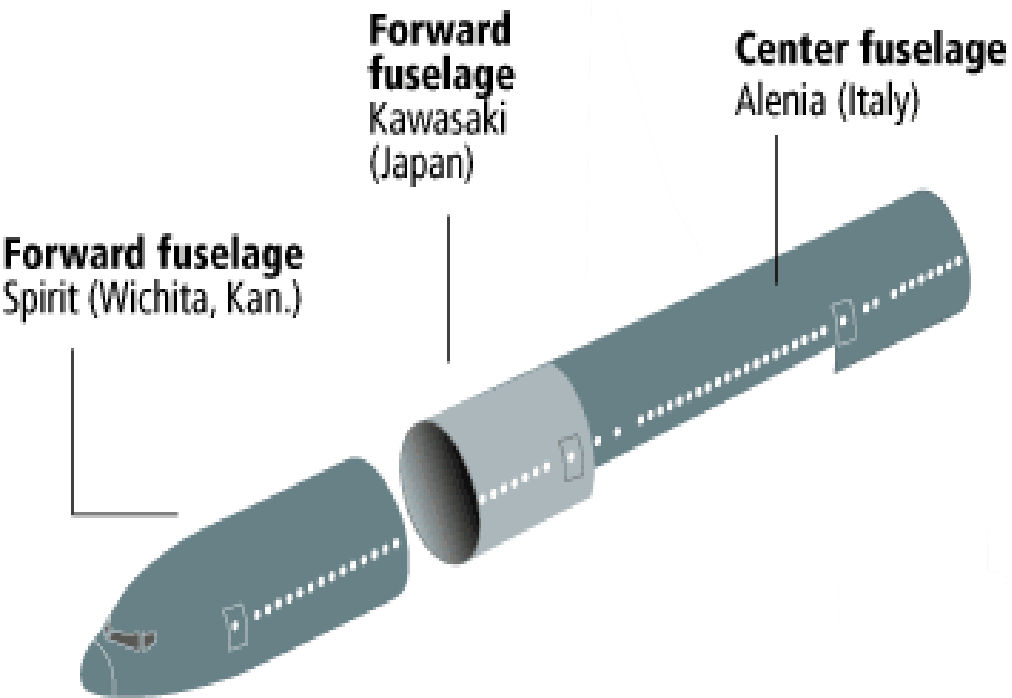


Boeing 787 Dreamliner



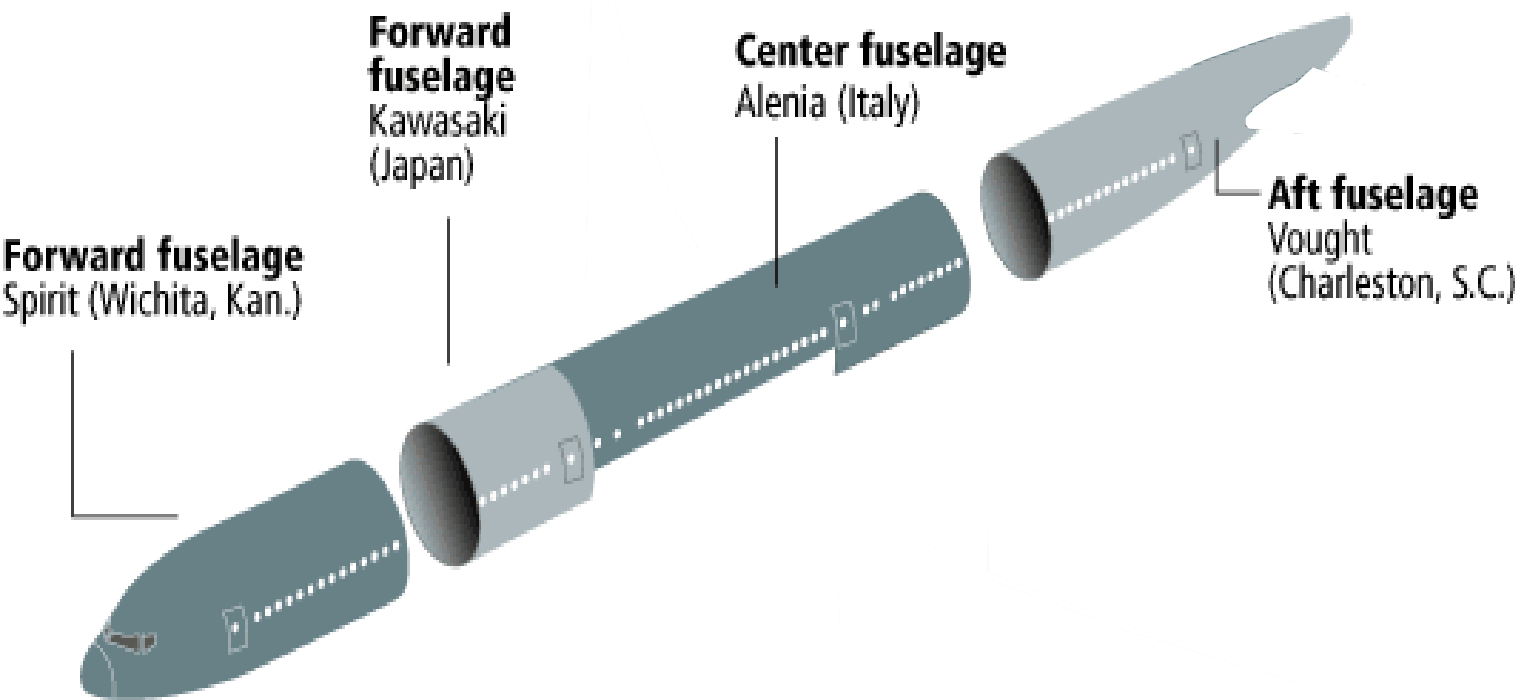
[1] <http://seattlepi.nwsourc.com/boeing/787/787primer.asp>
Graphic by David Badders, Seattle Post Intelligencer, used with permission

Boeing 787 Dreamliner



[1] <http://seattlepi.nwsourc.com/boeing/787/787primer.asp>
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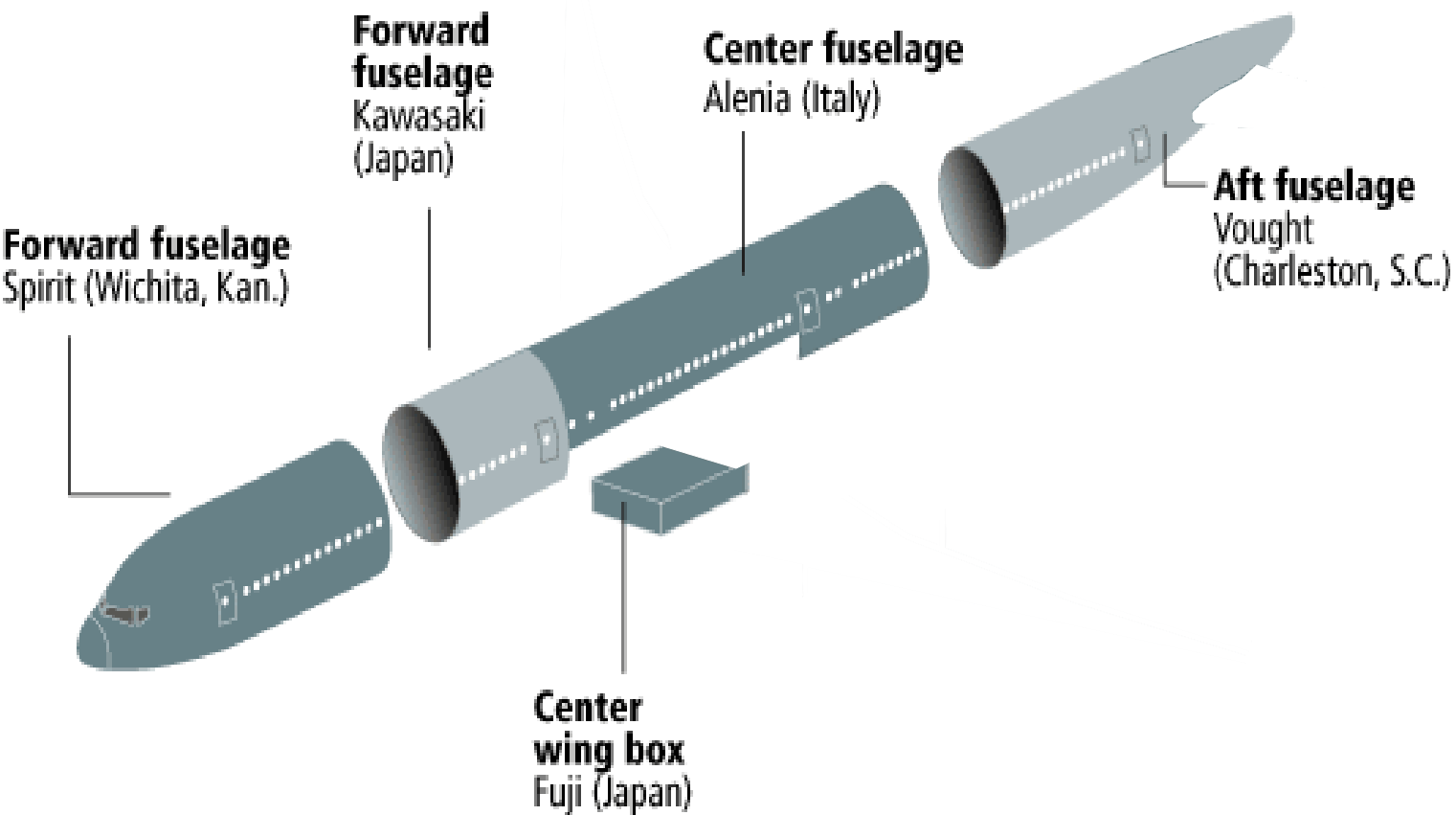
Boeing 787 Dreamliner



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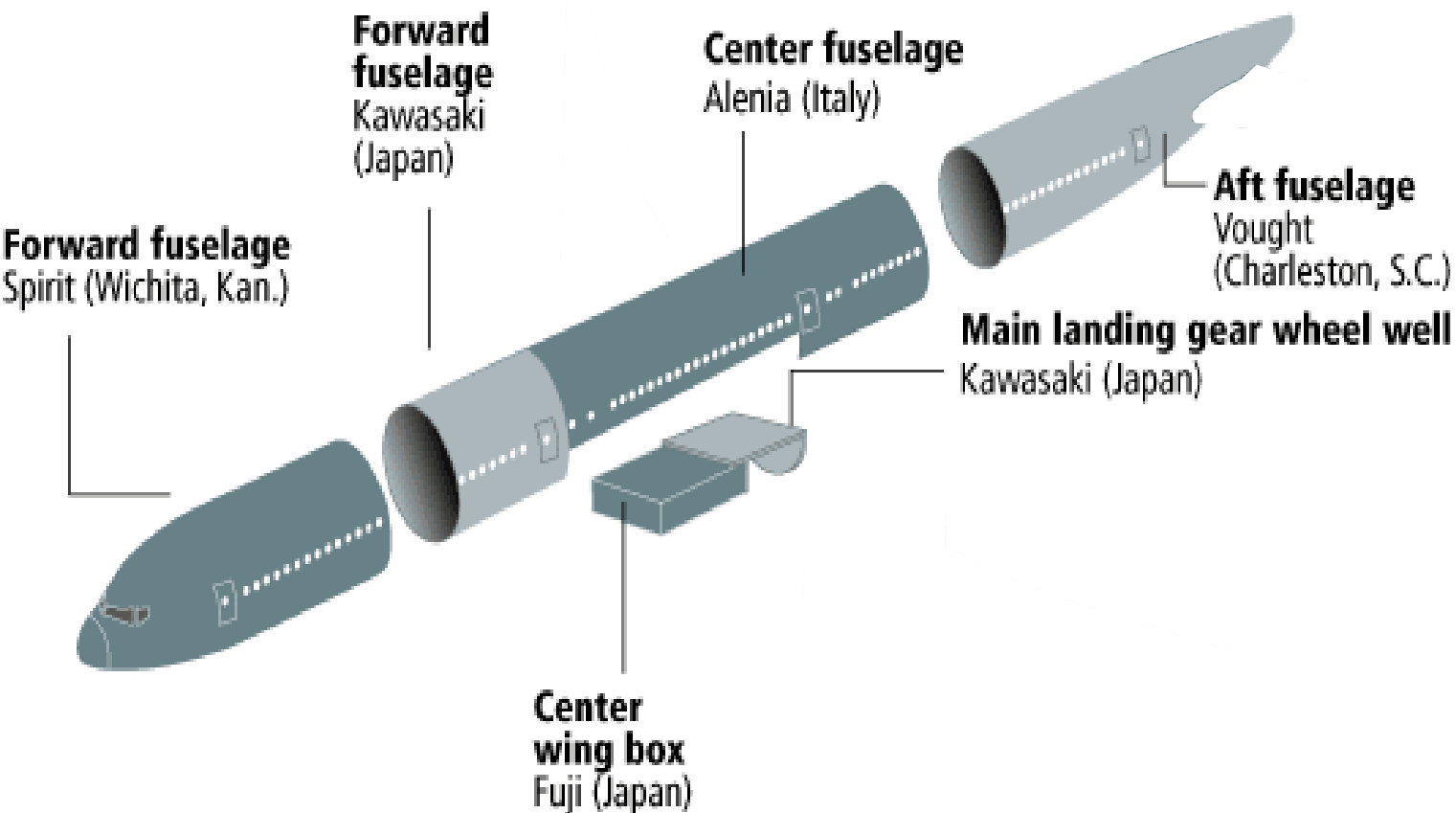
Graphic by David Badders, Seattle Post Intelligencer, used with permission

Boeing 787 Dreamliner



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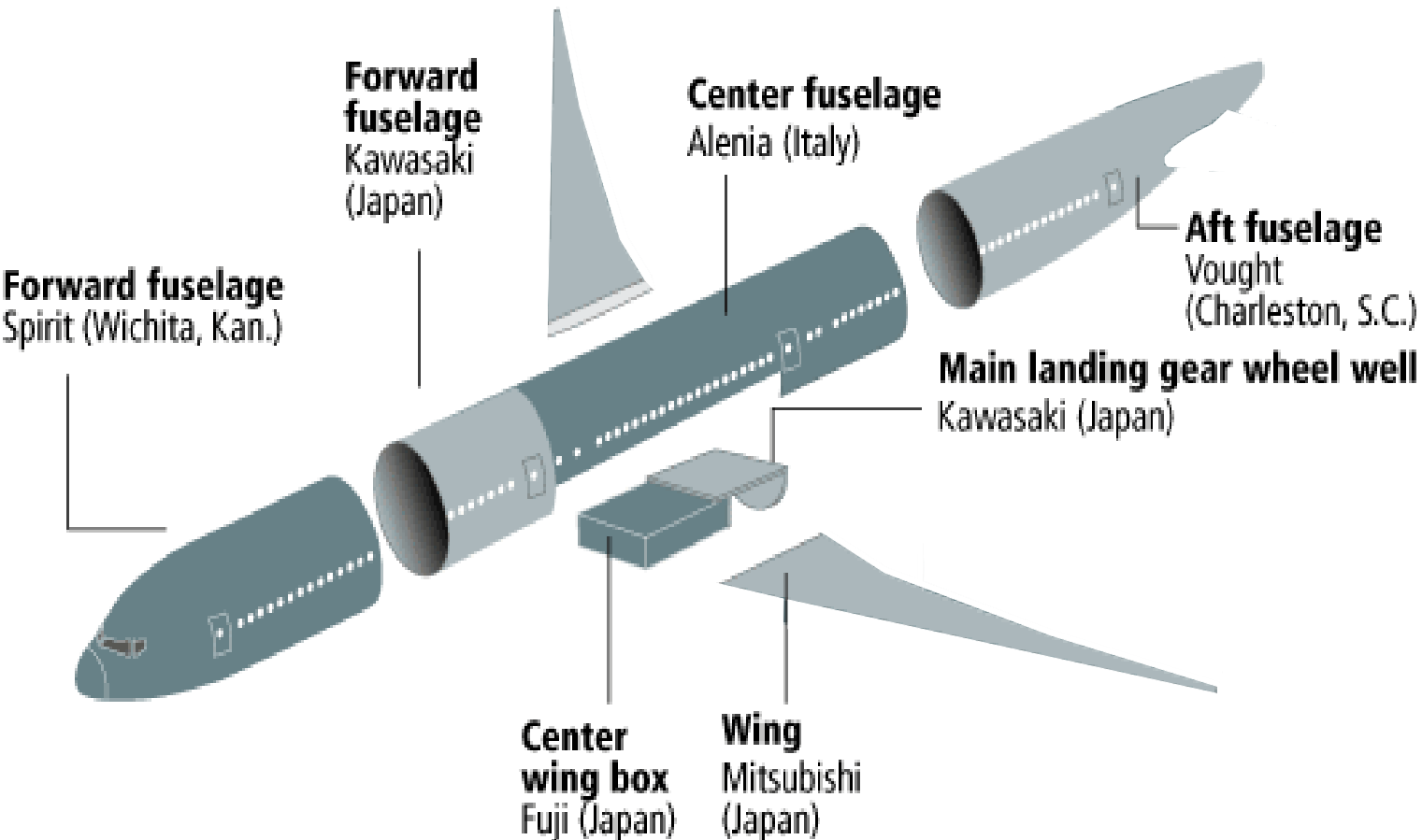
Boeing 787 Dreamliner



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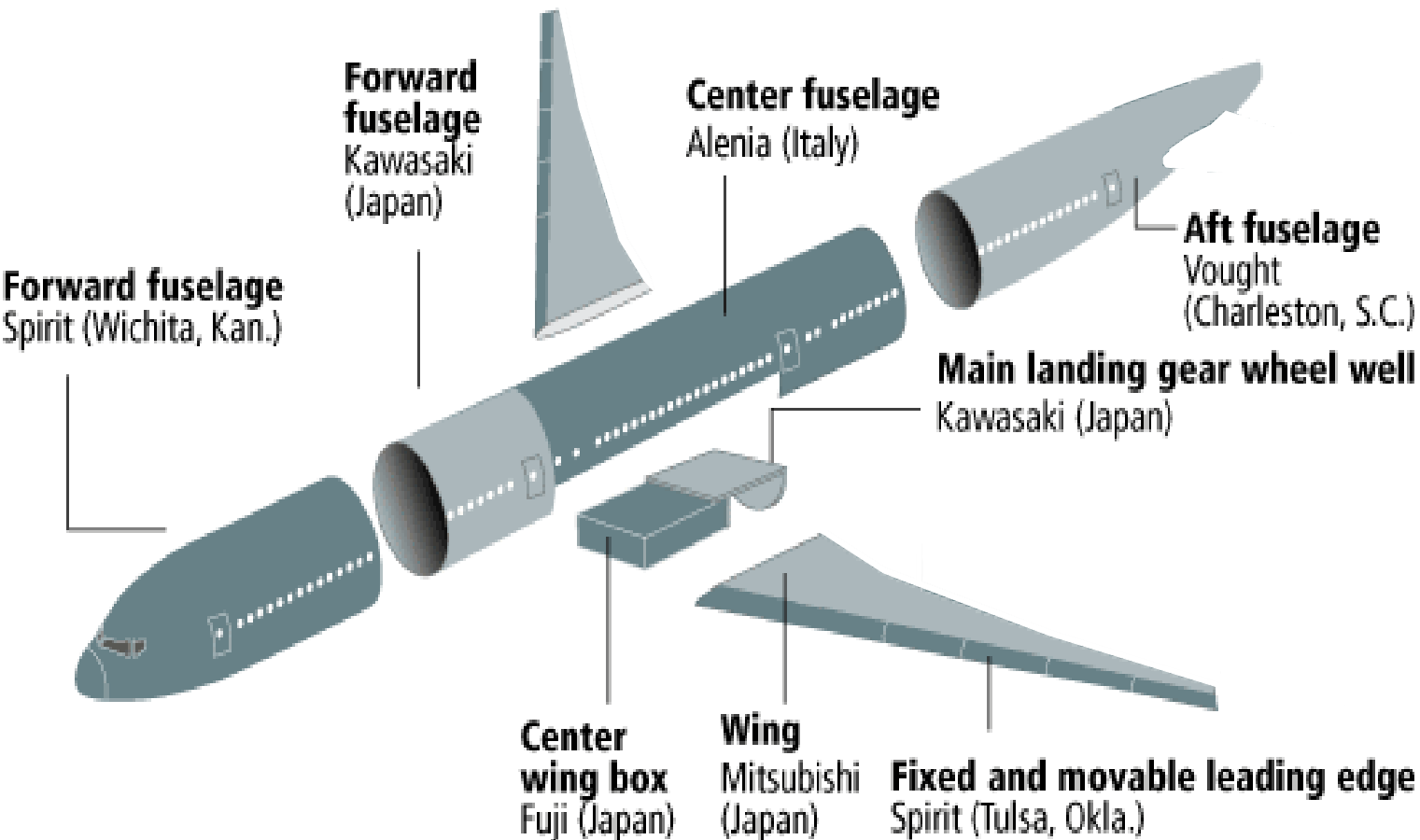
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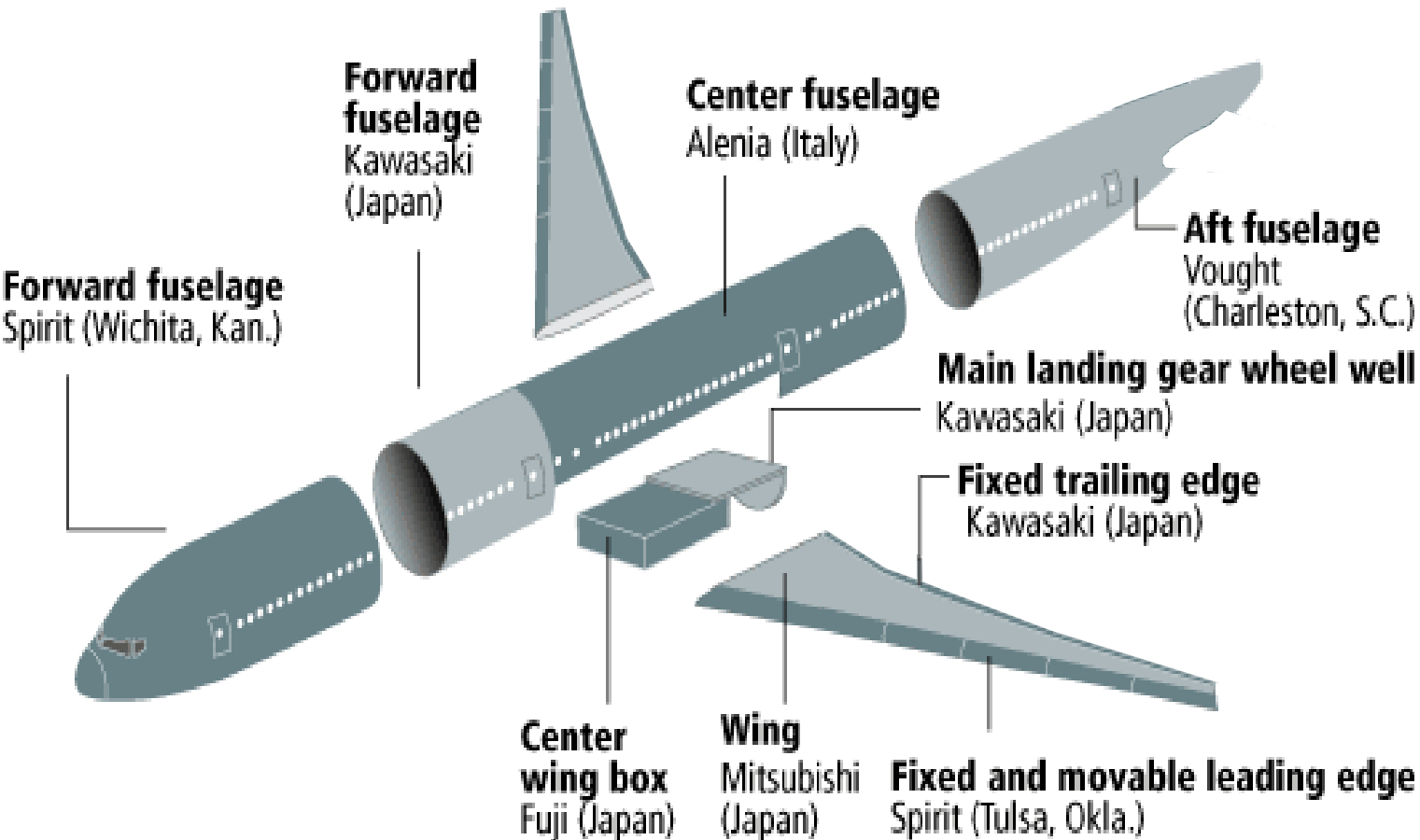
Boeing 787 Dreamliner



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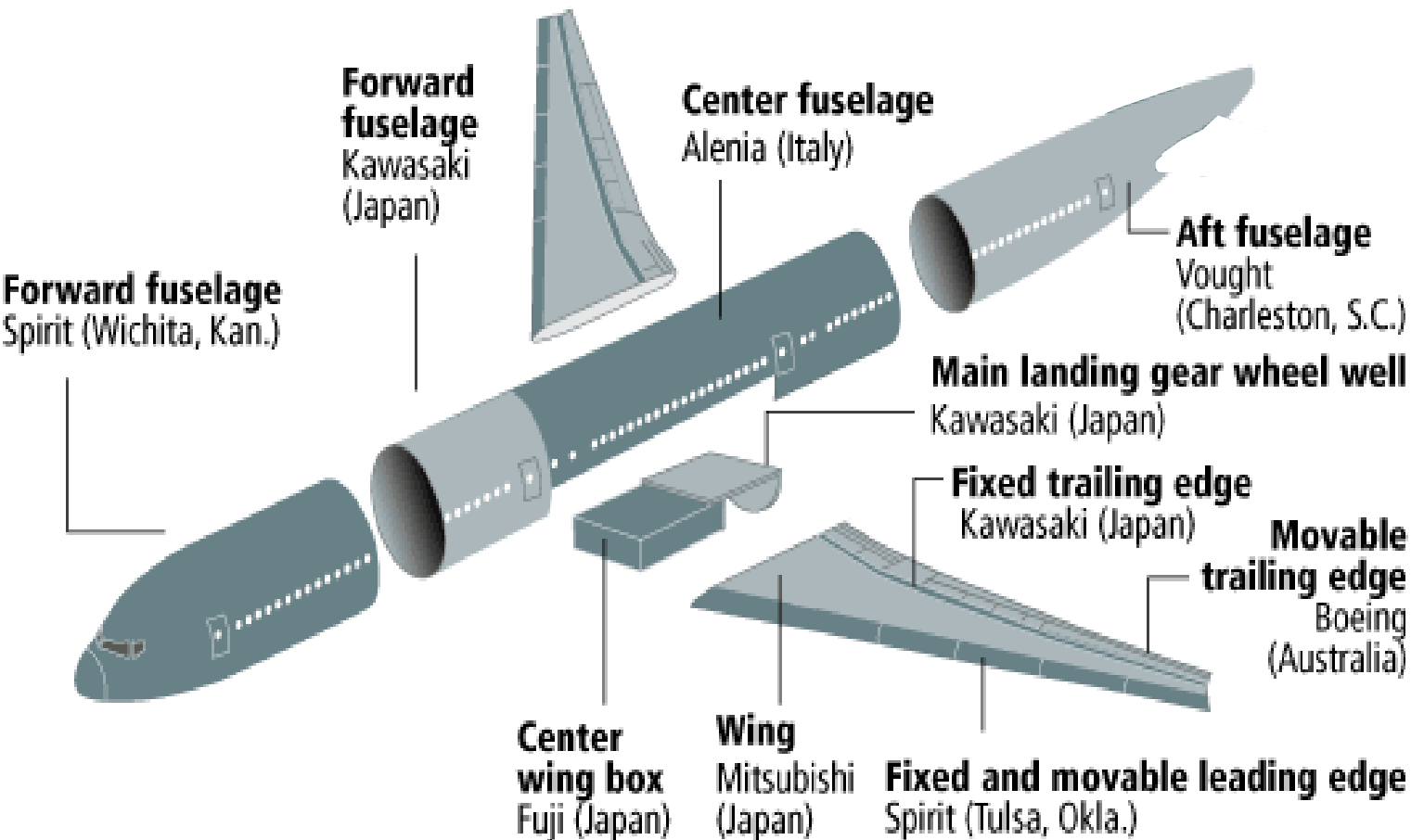
Boeing 787 Dreamliner



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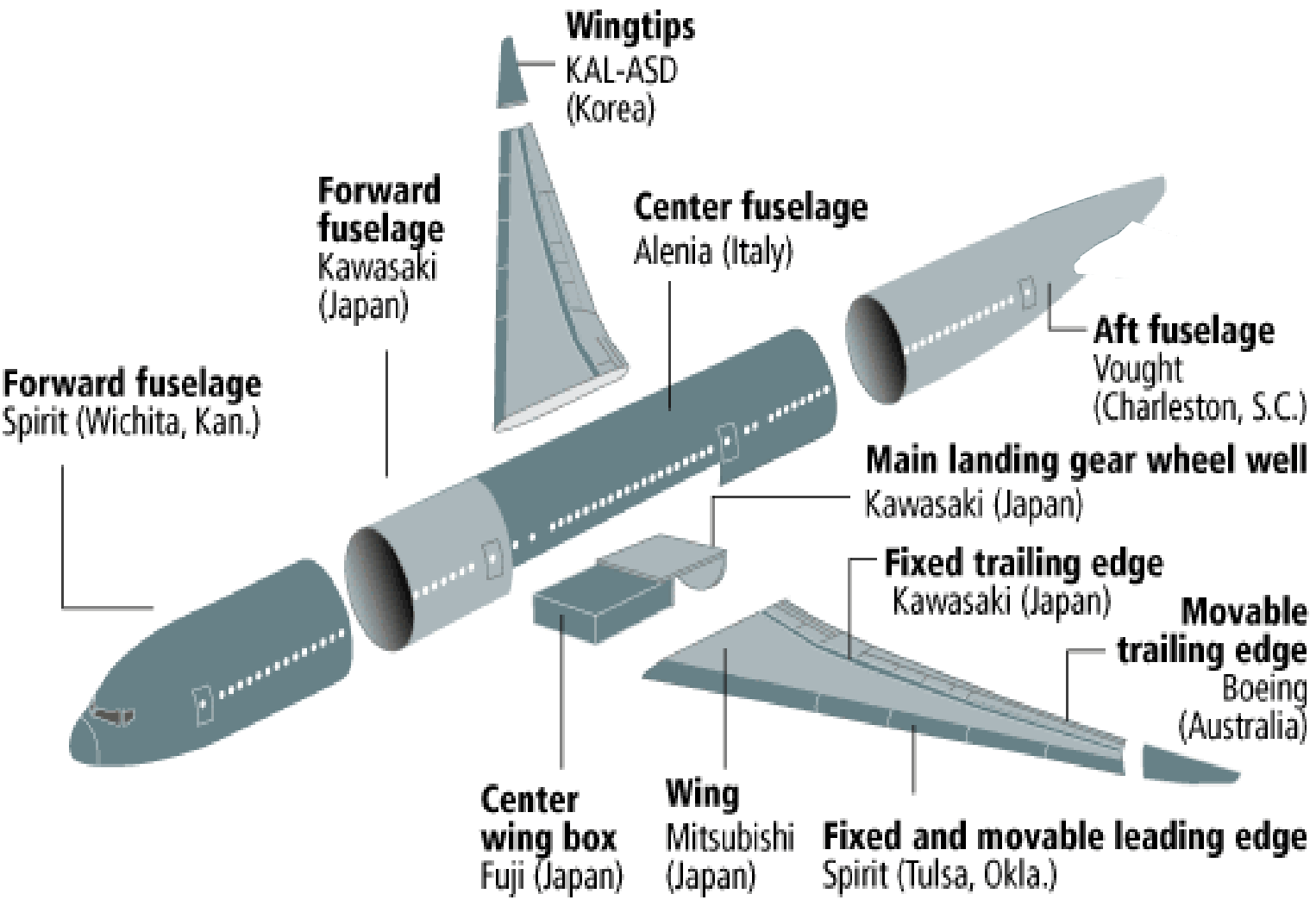
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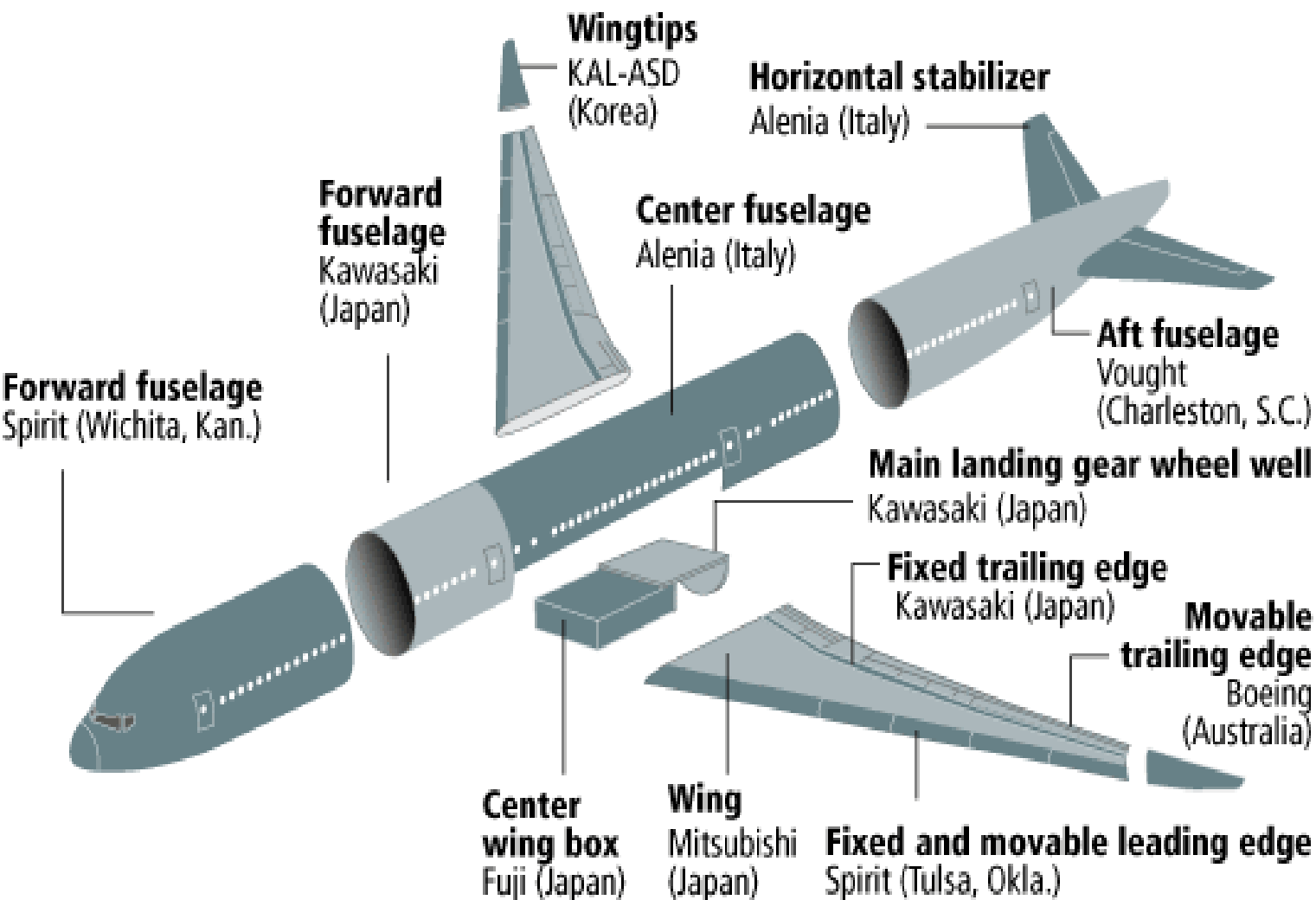
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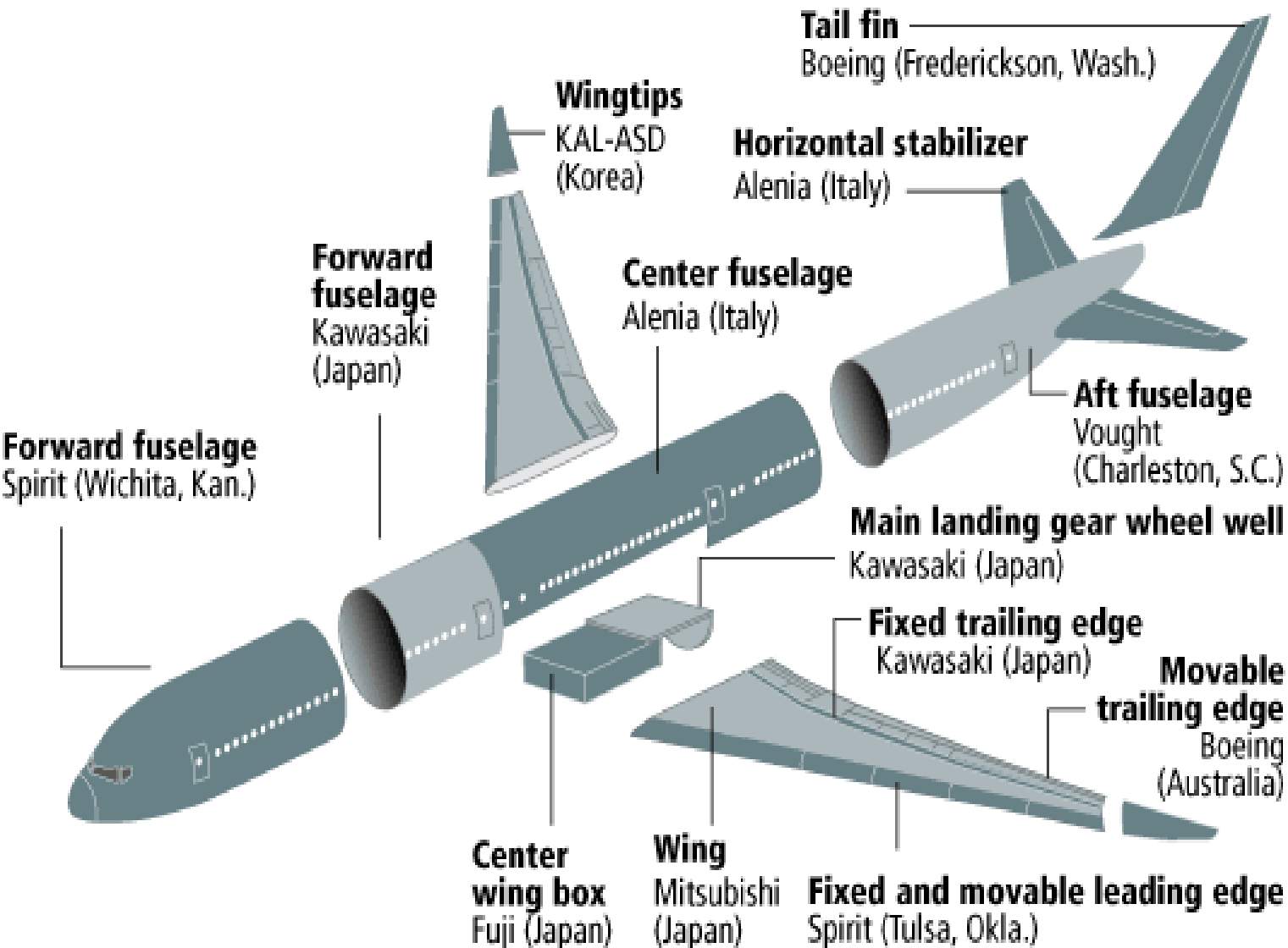
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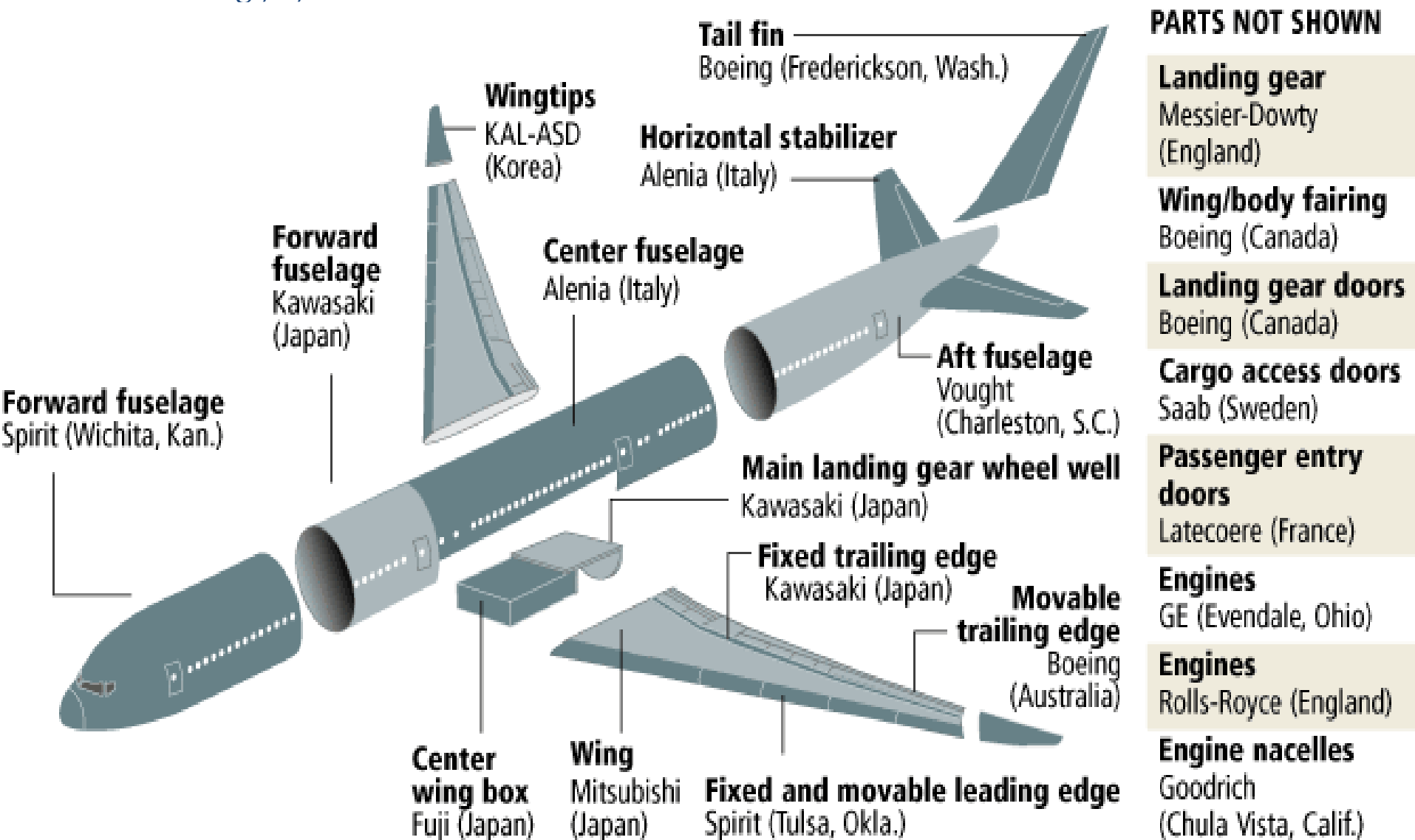
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Friday, August 14, 2009

Boeing halts 787 fuselage production in Italy

Puget Sound Business Journal (Seattle) - by [Steve Wilhelm](#)

A glitch with the composite fuselage of **Boeing's** much-delayed 787 has prompted Boeing to order a halt to new work at Italian supplier **Alenia**, which makes the section, but the stoppage won't affect the production schedule, Boeing said Friday.

The problem involves composite stringers made by Alenia to reinforce the section. The parts are off by thousandths of an inch from Boeing's specifications, causing "microscopic" wrinkles in the fuselage section's composite skin, said 787 program spokeswoman Lori Gunter.

The fuselage parts in question are on the aft end of the aircraft. They are sometimes referred to as barrels because they are round in cross-section and wound from carbon fiber composites for strength and lightness.

Boeing asked the Italian factory to stop making new barrels on June 23, when the problem was discovered.

A composite patch will be applied to 10 barrels still at the Alenia factory, and some others at Boeing's facility in Charleston, S.C., she said.

The problem won't interrupt the current schedule, she said.

"We can re-sequence work, get the change in place, start up building new barrels, and stay within schedules throughout," she said. "The first patch is being installed in Charleston now."

She said the fix won't require any change in Federal Aviation Administration certification procedures.

The current schedule's most recent delay, due to a flaw in the aircraft's wing-to-body join, also was announced on June 23, although Gunter called that timing a coincidence. The company has promised to issue a new 787 schedule for first flight and delivery by the end of September. The skin-wrinkle problem with the fuselages was first reported in **The Seattle Times**.

Who is your Customer?

<http://www.census.gov/main/www/popclock.html>

18:00 GMT (EST+5) Sep 03, 2009

World = 6,781,822,087

China = 1.37B

India = 1.17B

Americas = 0.94B

Africa = 0.92B

Europe = 0.82B

The Rest = 1.56B



Mumbai, India - Rush Hour

US growth rate 18 births every 4 minutes

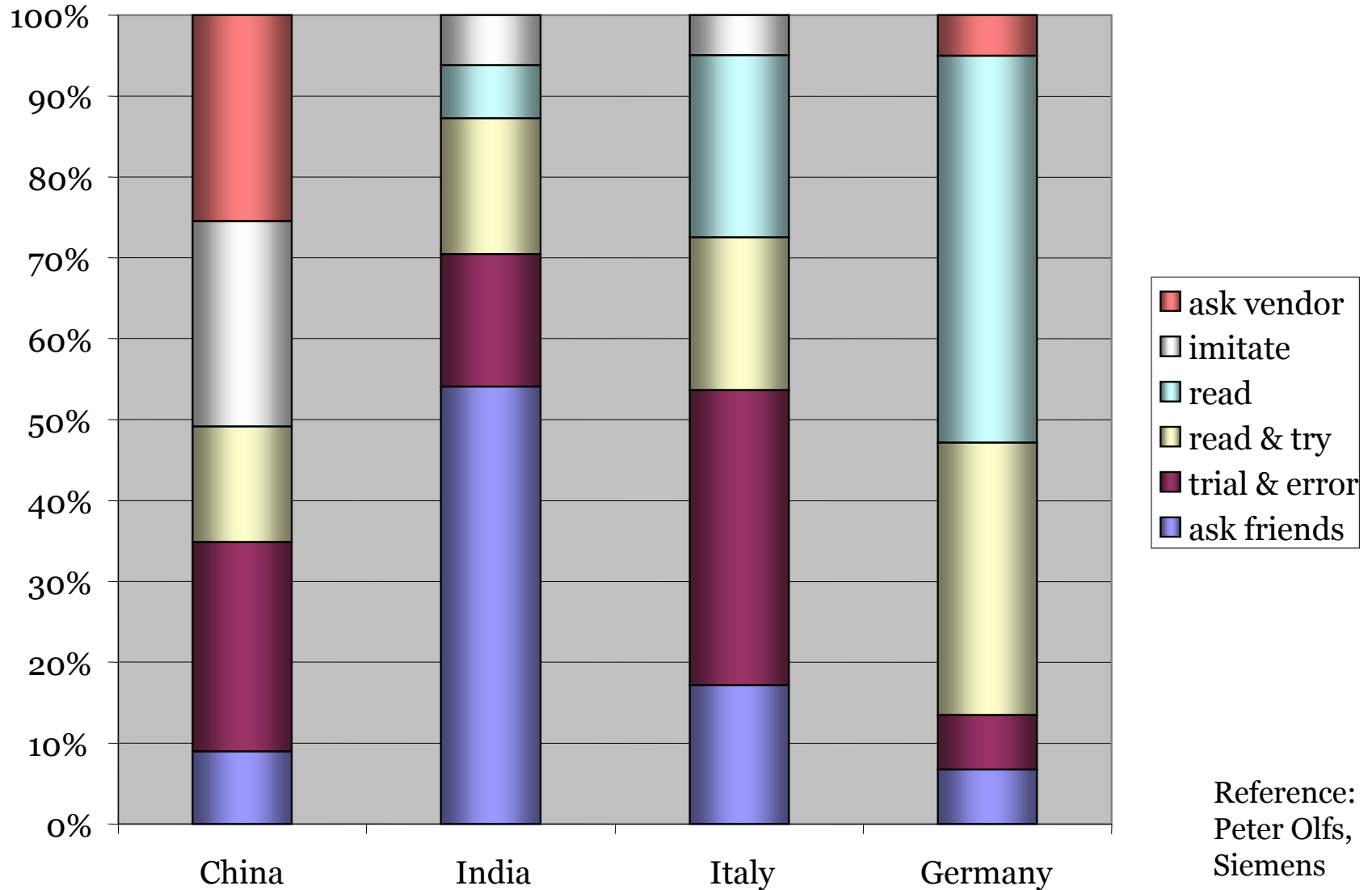
World growth rate 615 births every 4 min.

Case Study

How do you learn to use a Mobile Phone?

- **ask vendor**
- **imitate**
- **read**
- **read & try**
- **trial & error**
- **ask friends**

How do you learn to use a Mobile Phone?



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